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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,409	07/11/2003	Richard D. Dettinger	ROC920030129US1	5540
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William J. McGinnis, Jr. IBM Corporation, Dept. 917 3605 Highway 52 North Rochester, MN 55901-7829			DANG, THANH HA T	
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DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicant No.	Applicant(s)
	10/618,409	DETTINGER ET AL.
	Examiner Thanh-Ha Dang	Art Unit 2163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 11 July 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-33 is/are pending in the application.
 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-10 and 21-33 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) 1-33 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 11 July 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 07/11/03.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

1. Claims 1-33 are pending in this Office Action.

Elected claims 1-10 and 21-33 are rejected in this Office Action.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-10 and 21-33, drawn to object oriented database structure, classified in class 707, subclass 103R.
 - II. Claims 11-20, drawn to query processing, classified in class 707, subclass 3.

The inventions are distinct, each from the other because of the following reasons:

- Inventions I and II are related as subcombinations disclosed as usable together in a single combination.
- The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as a method of organizing object oriented database structure. Invention II has separate utility such as a method to query data. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Gero McClellan on January 7, 2005, a provisional election was made **with traverse** to prosecute the invention of Group I, claims 1-10, and 21-33. In replying to this Office action applicant must make affirmation of this election. Claims 11-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-7 and 8-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The language of claims 1-7 and 8-10 raises a question as to whether the claimed method is directed merely to an abstract idea that is not tied to a technological art, environment, or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

See MPEP 2106, section IV.B.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S.

patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-7, 8-10 and 29-33 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,640,221 issued to Levine et al. ("Levine").

As to claim 1, Levine teaches "a method for providing a logical representation of physical fields of physical data entities to facilitate querying the physical fields, the method comprising:

- providing a logical model to logically describe the physical fields, the logical model comprising logical fields corresponding to respective physical fields" (Figure 1 (block30A-C), wherein block30A represents the logical model of the employee table and its related fields (such as empnum, empname, empyears, empcity, emptitle, empboss), which correspond to respective physical table and fields of physical data entities); and
- "providing a runtime component configured to transform an abstract query into an executable query containing at least one combinatorial statement, the abstract query comprising a condition and at least two result fields selected from the logical fields of the logical model, each result field having executable counterparts in the combinatorial statement of the executable query" (Figures 1, 2, 3, and 4B illustrates the logical model to

transform an abstract query into an executable query, which is showed in Figure 6 as an example of a run-time component).

As to claim 2, Levine teaches “the combinatorial statement is a UNION statement and wherein the at least two result fields are related by UNION information which causes the runtime component to produce the UNION statement” (column 7, lines 24-50, wherein the union information results from the relationship 34B and left outer join type or a separate inner join or an AND condition to the relationship 34B or as additional join).

As to claim 3, Levine teaches “the abstract query is user-defined” (Figure 1, column 5, lines 55-67 and column 6, lines 1-42).

As to claim 4, Levine teaches “the executable query is an SQL statement” (column 7, lines 30-38).

As to claim 5, Levine teaches “the executable query is an Xquery statement” (column 7, lines 30-38; wherein SQL executable query is essentially equivalent to a Xquery statement in another format).

As to claim 6, Levine teaches “the physical data entities comprise a plurality of tables in a database” (Figure 1, column 6, lines 21-27).

As to claim 7, Levine teaches “a graphical user interface wherein the at least two result fields are specified in a graphical user interface” (Figure 1, wherein Results18D displays the final result which is equivalent to at least two result fields, column 6, lines 6-12).

As to claim 8, Levine teaches “a method for providing a logical representation of physical fields of physical data entities to facilitate querying the physical fields, the method comprising:

- providing a logical model to logically describe the physical fields, the logical model comprising logical fields corresponding to respective physical fields” (Figure 1 (block30A-C), wherein block30A represents the logical model of the employee table and its related fields (such as empnum, empname, empyears, empcity, emptitle, empboss), which correspond to respective physical table and fields of physical data entities);
- “receiving an abstract query defined with respect to a logical model comprising logical fields corresponding to respective physical fields, the abstract query comprising a condition and at least two result fields selected from the logical fields of the logical model” (Figure 4B, wherein items 58A-B and 58 illustrate the condition and description of an abstract query as claimed, column 9, lines 29-40); and
- “transforming the abstract query into an executable query containing at least one combinatorial statement, the abstract query comprising a condition and at least two result fields selected from the logical fields of the logical model, each result field having executable counterparts in the combinatorial statement of the executable query” (Figure 2, column 7, lines 24-50 and column 8, lines 12-45).

As to claim 9, Levine teaches “the physical data entities comprise a plurality of tables in a database” (Figure 1, column 6, lines 21-27).

As to claim 10, Levine teaches “a graphical user interface wherein the at least two result fields are specified in a graphical user interface” (Figure 1, wherein Results18D displays the final result which is equivalent to at least two result fields, column 6, lines 6-12).

As to claim 29, Levine teaches “a computer system, comprising memory and at least one processor, and further comprising:

- a logical model comprising a plurality of logical field definitions mapping to physical fields of physical entities of data, whereby the logical model provides a logical view of the data” (Figure 1, wherein Tables&Relations22 illustrates a logical model which provides a logical view of the data (e.g. Employee table and its related fields such as: empnum, empname, empyears, empcity, emptitle, empboss); and
- “a graphical user interface allowing user selection and arrangement of logical result fields selected from the logical model; wherein the graphical user interface comprises input cells for user-selected logical result fields and wherein a predefined geometric relationship between cells specifies whether user-selected logical result fields in the cells are related by a first combinatorial statement type or a second combinatorial statement type” (Figure 1 illustrates a graphical user interface allowing user selection and

arrangement of logical result field selected from logical model via different elements included in the preferred SQLTool10, column 5, lines 38-65).

As to claim 30, Levine teaches “the first combinatorial statement type is a UNION and the second combinatorial statement type is a JOIN” (column 7, lines 12-50).

As to claim 31, Levine teaches “the predefined geometric relationship is vertical” (column 3, lines 25-28 and column 8, lines 27-33 and lines 46-56).

As to claim 32, Levine teaches “user-selected logical result fields in horizontally adjacent cells are JOINed” (Figure 1, wherein the relations 34A and 34B from the Employee and Customer tables illustrate fields in horizontally adjacent cells are joined, column 7, lines 12-21).

As to claim 33, Levine teaches “a relational database containing the physical entities of data” (Figure 1, column 4, lines 2-4).

Claims 21-23 and 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,408,308 issued to Maslyn et al. (“Maslyn”).

As to claim 21, Maslyn teaches “a method for building queries, comprising:

- providing a logical model to logically describe the physical fields, the logical model comprising logical fields corresponding to respective physical fields” (Figures 7A-7K, column 6, lines 61-67);

- "providing a graphical user interface allowing user selection and arrangement of logical result fields selected from the logical model" (Figure 10B, column 12, lines 45-67, column 13, lines 1-5);
- "receiving user input specifying a selection and a location, in the graphical user interface, of a first logical result field" (Figure 10B (block602)column x, lines);
- "receiving user input specifying a selection and a location, in the graphical user interface, of a second logical result field, wherein the first and second logical result fields have a relative geometric relationship and define at least a portion of an abstract query" (Figure 10B (block608), column 12, lines 59-67 and column 13, lines 1-5); and
- "transforming the abstract query into an executable query containing at least one combinatorial statement containing representations of the first and second logical result fields, and being generated as a result of the relative geometric relationship" (Figure 10A (block580), column 12, lines 39-44).

As to claim 22, Maslyn teaches "the combinatorial statement is a UNION" (column 12, lines 59-63, wherein the add procedure is equivalent to a UNION).

As to claim 23, Maslyn teaches "displaying each of the logical fields of the logical model as selectable logical result fields in the graphical user interface" (Figures 11-12, column 14, lines 49-57).

As to claim 24, Maslyn teaches "a computer readable medium containing a graphical user interface program which, when executed, performs an operation for building abstract queries defined with respect to a logical model comprising a plurality of logical field definitions mapping to physical fields of physical entities of the data, the operation comprising:

- receiving user input specifying a selection and a location, in the graphical user interface, of a first logical result field; wherein the graphical user interface allows user selection of logical result fields from the logical model and supports combinatorial relations between user selected logical result fields" (Figures 1, 2, 9, and 10A-B, column 11, lines 24-41); and
- "receiving user input specifying a selection and a location, in the graphical user interface, of a second logical result field, wherein the first and second logical result fields define at least a portion of an abstract query, which is transformed into an executable query containing at least one combinatorial statement containing counterparts of the first and second logical result fields" (Figure 10A, column 12, lines 32-44).

As to claim 25, Maslyn teaches "the combinatorial statement is a UNION" (column 12, lines 59-63, wherein the add procedure is equivalent to a UNION).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being anticipated over U.S. Patent No. 6,640,221 issued to Levine et al. ("Levine") and further in view of U.S. Patent No. 6,408,308 issued to Maslyn et al. ("Maslyn").

As to claim 26, Maslyn teaches "a computer readable medium containing a program which, when executed, performs an operation for building abstract queries defined with respect to a logical model comprising a plurality of logical field definitions mapping to physical fields of physical entities of the data, the operation comprising:

- receiving user input specifying a selection and a location, in a graphical user interface, of a first logical result field; wherein the graphical user interface allows user selection and arrangement of logical result fields selected from the logical model" (Figures 9, and 10A-B, column 11, lines 24-41);
- "receiving user input specifying a selection and a location, in the graphical user interface, of a second logical result field, wherein the first and second logical result fields have a relative geometric relationship and define at

least a portion of an abstract query" (Figures 9, and 10A-B, column 12, lines 32-44); and

- "transforming the abstract query into an executable query containing at least one combinatorial statement containing counterparts of the first and second logical result fields, and being generated as a result of the relative geometric relationship" (Figure 10A (block580), column 12, lines 32-44).

As to claim 27, Maslyn teaches "the combinatorial statement is a UNION" (column 12, lines 59-63, wherein the add procedure is equivalent to a UNION).

As to claim 28:

Maslyn teaches "a computer readable medium containing a program which, when executed, performs an operation for building abstract queries defined with respect to a logical model comprising a plurality of logical field definitions mapping to physical fields of physical entities of the data, the operation comprising: receiving user input specifying a selection and a location, in a graphical user interface, of a first logical result field; wherein the graphical user interface allows user selection and arrangement of logical result fields selected from the logical model" (Figures 9, and 10A-B, column 11, lines 24-41); "receiving user input specifying a selection and a location, in the graphical user interface, of a second logical result field, wherein the first and second logical result fields have a relative geometric relationship and define at least a portion of an abstract query" (Figures 9, and 10A-B, column 12, lines 32-44); and "transforming the abstract query into an executable query containing at least one

combinatorial statement containing counterparts of the first and second logical result fields, and being generated as a result of the relative geometric relationship" (Figure 10A (block580), column 12, lines 32-44).

Maslyn does not explicitly teach "the relative geometric relationship is vertical".

Levine teaches "the relative geometric relationship is vertical" (column 3, lines 25-28 and column 8, lines 27-33 and lines 46-56).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Levine with Maslyn to provide a system and/or method, which enhance the combined features of object-oriented database structure and application to provide a sophisticated and a user-friendly system.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Ha Dang whose telephone number is 571-272-4033. The examiner can normally be reached on Monday-Friday from 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thanh-Ha Dang
Examiner
Art Unit 2163



ALFORD KINDRED
PRIMARY EXAMINER